ELL Reader

Science

Science

Leaves

by Emily Robertson



Genre	Build Background	Access Content	Extend Language
Poetry	• Life Cycles of Leaves • Photosynthesis • Seasons of the Year	• Labels • Caption • Definitions • Glossary • Rhyme	• Word Origins: Greek Roots • Seasonal Words

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Leaves

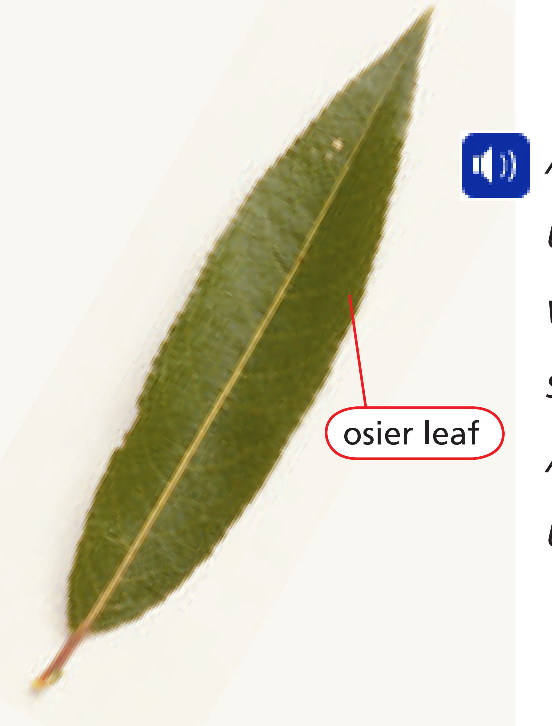
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A leaf is a wonder all
year round,
Up in a tree or down on
the ground.
Wide or narrow, shiny
or dull,
Shaped like a flame or
fan or star,
A leaf is a wonder all
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What do you know about leaves on a tree?
You probably know a lot!
They give shade in summer and rustle in breezes.
They hide birds' nests and feed hungry creatures.
You've probably seen a leaf that's been eaten—
Chomp, chomp! Touch the holes and you feel
Where some caterpillars came for a meal.
And maybe you also know that in fall
Leaves lose their green. Gold shines through
Or red or orange or purple too.
A cool wind blows, and leaves flutter down—
Crunch, crunch! What a glorious sound!
Walk in them, roll in them, throw them around!

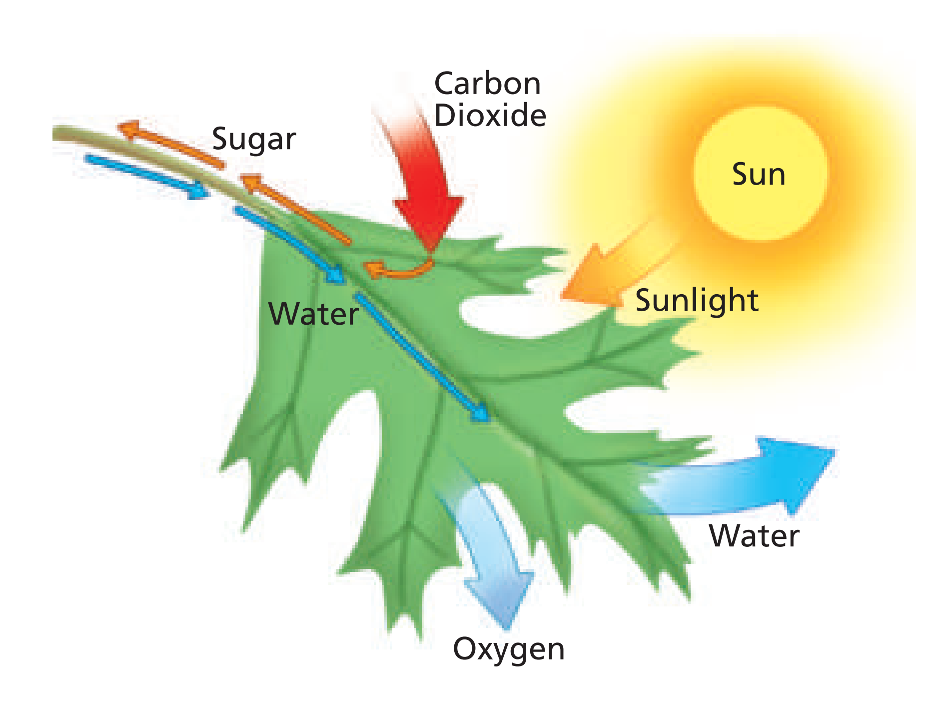
rustle: move with soft, crackling sound

flutter: move back and forth rapidly



But maybe you're curious—I am too—
You wonder what leaves are and what they do.
Well, look at a leaf, and you'll be fascinated.
It's one of the greatest things ever created.
It breathes for the tree and makes food too—
Hard to imagine? Well, it's really true!
Leaves make sugary water that helps trees grow
Through ***photosynthesis***. (What a word to know!)
It's the process by which food is made
Inside the leaf, as this picture displays:

process: series of actions or events



In photosynthesis, the *chlorophyll* in the leaf gathers energy from the sunlight. This energy helps water and carbon dioxide combine to form the sugary water that feeds the tree. Oxygen is also produced.

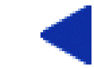


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This all happens during long summer days,
The leaf gathers energy from the Sun's rays.
Chlorophyll does this—it's the substance in leaves
That gives them the rich green color you see.
The chlorophyll works with the strong sunlight
And ***carbon dioxide*** that's in the air
And water that's traveled up through the roots—
All these things combine in the leaf to produce
That sugary water that flows like juice—
It's what the tree needs to grow all it grows:
Branches, buds, flowers, leaves, fruits, and seeds.
And one more thing happens that's very good
The leaf makes ***oxygen*** when it makes food,
And that's what people and animals breathe—
Just one more reason to care about trees!

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substance: material



In the fall, the trees shiver on cold mornings.
The sunlight turns golden, but it doesn't last
Like it did in summer, when all day long
The leaves made food for the tree to grow
strong.
Without enough light, photosynthesis stops;
No more food will be made this year.
So the green color fades, and gold appears,
Or purple or orange or tan or red—
Turning the leaves into precious jewels.
You may be confused when I tell you this news,
But those colors were always there.
It's just that the green was so strong before;
When the leaf made food for the tree,
It blocked out all those beautiful colors
That in the fall you can finally see.



Extend Language **Word Origins**

The word *photosynthesis* means "putting together with light" and comes from the Greek words *phôs* ("light") and *syntithenai* ("to put together").

Can you tell why this is a good name for the process by which leaves make food for trees?





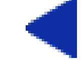
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In fall, the leaves glimmer, but little by little
They grow brown and their stems grow brittle.
The winter wind finally brings them all down
To serve as a blanket for the cold ground.
But new buds grow where the old stems were,
And all winter long, under frost and ice,
The new buds on branches stay closed tight.
And what goes on with the leaves that fell?
You wouldn't believe it, but there's lots to tell.
The leaves on the ground begin to decay
And turn into ***humus***, a substance in soil
That is rich and good for new plants to grow,
When spring returns and warm winds blow.

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glimmer: shine

brittle: fragile, likely to break





In spring, the sun shines longer and longer.
Each day the light grows warmer and stronger.
The trees that were sleeping start to wake,
And the buds on their branches sprout and take
Light, warmth, and springtime showers
To unfold into fresh new leaves and flowers.
And here's where it happens all over again—
When everything's green, and tender, and new.
You know the story now; I leave it to you
To tell how leaves make food for trees
As they hide birds' nests and sway in the breeze,
And give hungry creatures a tasty treat
And offer cool shade in the summer heat,
And fall in the fall in colorful glory—
Now it's your turn. Can you tell the story?

Glossary

car•bon di•ox•ide
(kär′bən dī ok′sīd), ***NOUN.*** **an odorless gas, present in the atmosphere and formed when any fuel containing carbon is burned. The air that is breathed out of an animal's lungs contains carbon dioxide. Plants absorb it from the air and use it to make plant tissue.**

chlo•ro•phyll
(klôr′ə fil), ***NOUN.*** **the substance in green plants that gives them their color. Plants use chlorophyll and light to make their own food from water and carbon dioxide.**

hu•mus
(hyü′məs), ***NOUN.*** **a dark brown part of the soil formed from decayed leaves and other plant matter. Humus contains valuable plant foods.**

ox•y•gen
(ok′sə jən), ***NOUN.*** **an invisible gas that forms about one fifth of the air and about one third of water. Oxygen is a chemical element. Animals cannot live without oxygen. Fire will not burn without oxygen.**

pho•to•syn•the•sis
(fō′tō sin′thə sis), ***NOUN.*** **the process by which green plants use the energy of light to make their own food from carbon dioxide and water. During photosynthesis, plants send out oxygen.**

Talk About It

1. Why are leaves green in spring and summer?
2. What causes leaves to stop making food in the fall?

Write About It

3. On a separate sheet of paper, make a timeline to show what happens to leaves in spring, summer, fall, and winter. Write about your favorite season, and describe what is happening to leaves during that season.

Spring ***Summer*** ***Fall*** ***Winter***

Extend Language

Another word for the fall season is *autumn*. In many places, autumn is cool. Think of two words to describe each season. For example, winter can be *snowy*.

Illustration Credit: **3** Greg Harris.

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